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(54) Bench supervisor system

(57) An analytical system comprises a Bench Supervisor system (10), which is responsible for coordinating the operations of various hardware instruments in carrying out a bench method or a bench sequence for chemical analysis. The Bench Supervisor system communicates with a number of instrument applications (i.e., programs) (12A-12F), which applications directly interface with and control the operations of the instruments (14A-14I) composing the bench hardware (eg. gaschromatographs, LC, GC/MS etc.). The benchhardware also comprisesa transport instrument (eg. a robotarm 14B). In general, the bench hardware comprises a variety of instruments which may be categorized as preparation instruments, analytical instruments, or transport instruments. The Bench Supervisor comprises a Host Services module (10-1); a Resource Entry module (10-2); a Bench Method Commands module (10-3); a Sequence Commands module (10-4); a Configuration module (10-5); a Sequence Scheduler module (10-6); a Resource Allocation module (10-7); a Communications module (10-8); a Data Base Management module (10-9); a Data Base Access Module (10-11); and a CP module (10-10).

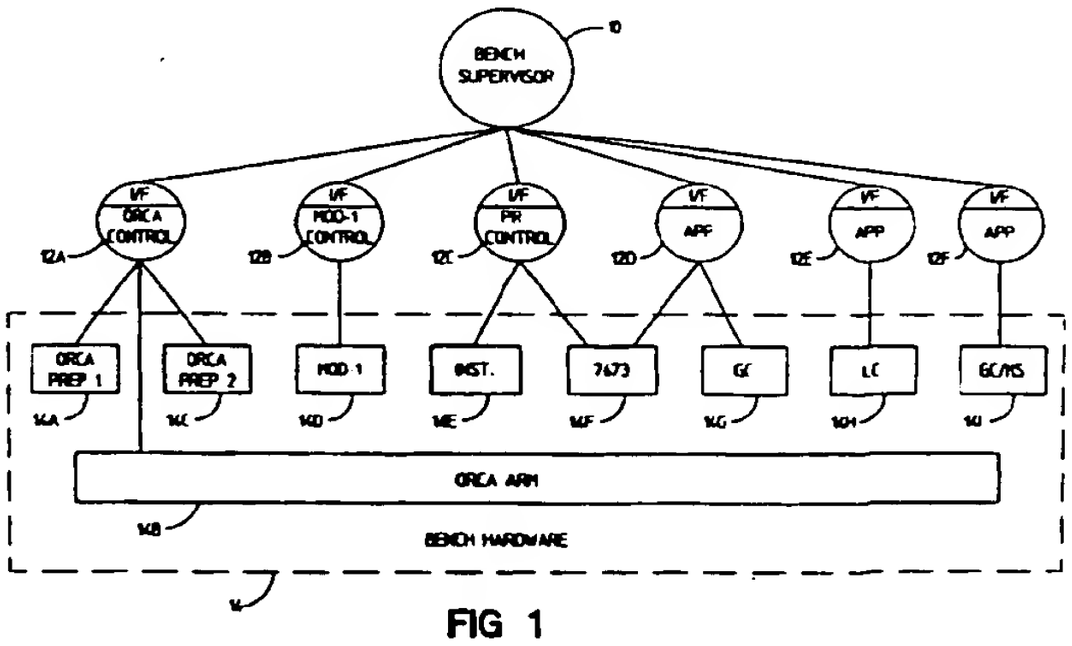

FIG 1

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EUROPEAN SEARCH REPORT

Application Number
EP 93 11 2825

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.5)
X	JOURNAL OF CHEMICAL INFORMATION AND COMPUTER SCIENCES, JAN.-FEB. 1992, USA, vol. 32, no. 1, ISSN 0095-2338, pages 79-87, ZHOU T ET AL 'Object-oriented programming applied to laboratory automation. 1. An icon-based user interface for the Analytical Director'	1,2,4,6, 7	G01N35/00 G06F15/20 G05B19/417
Y	* the whole document * ---	3,5,8	
Y	IMTC '92. IEEE INSTRUMENTATION AND MEASUREMENT TECHNOLOGY CONFERENCE (CAT. NO.92CH3151-8), METROPOLITAN, NY, USA, 12-14 MAY 1992, ISBN 0-7803-0640-6, 1992, NEW YORK, NY, USA, IEEE, USA, pages 239-242, STANISLOWSKI W 'Instrument control enhancements using Microsoft Windows 3.0'	3,5,8	
A	* the whole document * ---	1,2	
A	WO-A-91 06050 (APPLIED BIOSYSTEMS INC) * page 15, paragraph 3 - page 30, paragraph 3 * ---	1,2,4,7, 8	TECHNICAL FIELDS SEARCHED (Int.Cl.5) G01N G05B G06F
A	PATENT ABSTRACTS OF JAPAN vol. 013 no. 452 (P-943) ,12 October 1989 & JP-A-01 174965 (SUMITOMO CHEM CO LTD) 11 July 1989, * abstract * & DATABASE WPI Section Ch, Week 8933 Derwent Publications Ltd., London, GB; Class J04, AN 89-239086 * abstract * ---	1,3,7,8	

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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
BERLIN	7 November 1995	Johnson, K

EPO FORM 1503 03.82 (P04C01)

CATEGORY OF CITED DOCUMENTS

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A	AEU, 1989, JAPAN, no. 6, ISSN 0385-0447, pages 69-75, ARAMAKI S 'LabWindows 9800 enables NEC PC-9800 instrument control'		

TECHNICAL FIELDS SEARCHED (Int.Cl.5)

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